

**Missouri Department of
Natural Resources
Administrative Policies and Procedures**

Chapter 8 Data Processing Digital Geospatial Metadata Component Content Standard Policy

Metadata Component Review Procedures

Effective date

Revised

Number: 8.03-01

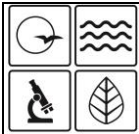
June 4, 2004

Refer to Overview of Geospatial Metadata Review Procedures (8.02-01) for general information about reviews, applicable standards, and the roles and responsibilities of data editors and reviewers.

It is recommended that the editor conduct this review before other staff are asked to conduct reviews. The data editor can expedite the review process by conducting a self-review to ensure that the findings of other staff are minimized. As an option, the editor may choose to perform the review procedures and not invoke other staff to participate. If this option is chosen, the editor will be recorded as both the content and component reviewer in the metadata. This option is not recommended because often times someone who has created something is not ideally suited to take an objective view of it, and because in this case, the editor becomes the primary party responsible for overall quality of the metadata and adherence to department standards.

The metadata content review is intended to ensure compliance with Digital Geospatial Metadata Component Content Standard policy (8.03). The policy deals with numerous aspects of the content of metadata components including spelling, formats for dates, times, and phone numbers, the use of acronyms, inclusion of disclaimers, methods for indicating unknown and non-applicable values, clarity of definitions, and the enumeration of coded values and their definitions. Many of these items are drawn from the department's Publication Style Manual and apply strictly to the metadata documentation. Others involve comparing the metadata to the attributes they describe and therefore require inspection of metadata and attribute data. Metadata standard (8.03) includes explanations and examples and therefore it may be useful to become familiar with it. The metadata can be provided in .xml, .txt, and .html formats among others. Text or ASCII files can be read using Microsoft Word which is available to all staff. Therefore staff do not need any special software tools to explore and evaluate metadata.

This review can be conducted by anyone but is best when done by staff familiar with the data set or the database from which it was created. All spatial data sets recently published by the department have been in ESRI's shapefile format, which uses dbase (.dbf) format files for attribute data. These files can be opened and explored using Microsoft Excel and Microsoft Access which are available to all staff. Therefore staff do not need special software tools to explore attribute data as they compare it to the metadata that describe them.



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PROCEDURES

Examples below are shown in blue text.

Work with a copy of the data and metadata files to be reviewed.

The data editor should be the only one to edit data or metadata so do not risk modifying the original files.

Print the metadata so you can follow it as you conduct the review.

Make a copy of

\\n-nr2g\ngis\REVIEW\DOCUMENTS\Metadata_Component_Checklist.xls **to use as you perform the review, recording all findings in the worksheet provided.**

METADATA

The items listed in this section can be checked by examining the metadata.

Acronyms

Ensure that acronyms are defined at their first use. This may be done by examining the printed metadata or by examining the metadata text file using a word processor. The exceptions to this are the acronyms ESRI, FGDC, GCS, NAD, and UTM which are inserted automatically by the metadata editing software.

Spelling

Open the text (.txt) metadata file using Microsoft Word and conduct a spelling check. Metadata element names are separated from the information entered by the editor with colons. These element names commonly use underscores and will be flagged as "not in dictionary" during spelling checks but should be ignored. Add these to Microsoft Word's dictionary to avoid these unwanted error messages in subsequent reviews.

[Maintenance_and_Update_Frequency: Quarterly](#)

Date formats

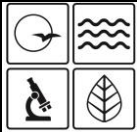
Dates appearing in metadata components shall be formatted as shown below.

[YYYYMMDD \(e.g. 20020925\)](#)

Hours of service

Entries shall be formatted as shown below. Note the differences in formats for time of day.

[Monday through Friday 8:30 a.m. to 5:30 p.m. Central time](#)



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Phone numbers and formats

Telephone numbers should use the format in the example below. Note the different format for toll-free listings.

[Contact_Voice_Telephone: \(573\) 368-2100](#)

[Contact_Facsimile_Telephone: \(573\) 368-2111](#)

[Contact_TDD/TTY_Telephone: 800-735-2966](#)

Relay Missouri number

All contact information provided in the metadata shall include the Relay Missouri number. This number is provided for use by the hearing impaired. The three most common places in the metadata where this will appear are.

[Identification_Information, Point_of_Contact](#)

[Data_Quality_Information, Process_Contact](#)

[Metadata_Reference_Information, Metadata_Contact](#)

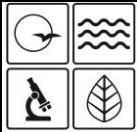
Mailing and Physical addresses

A physical address and a mailing address must always be included. If the physical and mailing address for a described entity are the same, the same address may be listed under separate entries (physical address, mailing address) or they can be combined and listed as a single entry (physical and mailing address).

Disclaimers

The following disclaimer shall be included in every metadata file. The first sentence of the disclaimer shall be included in both of the sections listed below. The language in these disclaimers was approved by department legal staff and is not to be modified. Additional statements may be appended after the disclaimer in these sections of the metadata, but the disclaimer must appear first.

- Under section 1.8, [Use_Constraints](#), the following disclaimer must be included:
Although all data in this data set have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials.
- Under section 6.3, [Distribution_Liability](#), the following disclaimer must be included:
Although all data in this data set have been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these data or related materials.



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ATTRIBUTE DATA AND METADATA

Inspect attribute data by comparing the metadata to the attribute data. Examine the number of attributes. If there are more than just a few, it is advisable to make a list of attributes so you can make notes while being certain not to skip any attributes as you check them.

Refer to the metadata for each attribute as you examine the data. The metadata provides information that will assist in determining what to expect in each attribute. The procedures below are to be repeated for each attribute.

Attribute names

Ensure that attribute names in the data match those in the metadata.

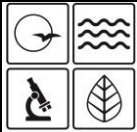
Attribute definitions

Ensure that attribute definitions describe the values in the attribute and clearly communicate their meaning. Attribute definitions should be understandable to users who are not experts with the data, and can reference relevant publications to supplement the definitions in the metadata.

Unknown and not applicable data

Attributes frequently contain records where the data are not known, are not applicable, or both. Ensure that a single method for representing unknown data is used for each attribute containing unknown values, and that the method is documented in the metadata. In some cases, unknown can have a different meaning than non-applicable. If the meaning is different, then one value should be used to indicate unknown and another should be used to indicate that the data are not applicable.

Data can be examined using a number of tools, but Microsoft Excel is a fairly easy and efficient tool to use for this. However, if the data set has more than 65,536 records, Excel will not be able to process the entire record set so Microsoft Access must be used. Neither program should be used to save changes to .dbf files associated with shapefiles. For attributes containing text, sorting the data in ascending order will display blank or null values at the top of the sorted data. For attributes containing numbers, sorting the data in descending order will display blank or null values at the top of the sorted data. If zeroes are used to represent unknown data, sorting the data in ascending order will put the zeroes at the top of the sorted data.



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For attributes containing text, the use of a word such as "unknown" or a single letter such as "u" is common. Blank or null attribute values are also common.

Attribute:

Attribute_Label: OWNER_NAME

Attribute_Definition: Name of owner of facility, blank if unknown.

For attributes containing numbers, the use of "0" is acceptable for representing unknown data provided that zero can not be considered a valid value for that attribute.

Attribute:

Attribute_Label: FIRE_DIST

Attribute_Definition: Distance to nearest fire hydrant, 0 if unknown.

For attributes containing numbers where zero can be a valid entry, values of -9999 or some variant of it (for example -99 or -9.999) are commonly used. An example of this might be elevation above the land surface, where zero could indicate that a feature is at ground level. Since zero is a valid value for this numeric attribute and nulls would not be permitted in a numeric attribute type, some number must be assigned to represent unknown values.

Attribute:

Attribute_Label: HEIGHT

Attribute_Definition: Estimated height above land surface in feet, -9999 if unknown.

As attribute data are examined for values that indicate unknown and not applicable, ensure that the metadata document the values and their meaning.

Ranges of values

If the actual values or a range of values for an attribute is specified in the metadata, inspect the values to ensure that all are listed or that they fall within the range described. Attributes such as facility name or facility street address have an unlimited number values. However, attributes such as the DNR region number in which a facility is located have a limited number of possible values. These attributes should be examined to look for values that are not documented.

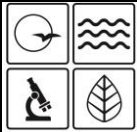
Microsoft Access can be used to inspect ranges of values without having to examine each record:

Rename the dbase (.dbf) file name to be nine characters or less if needed.

Import the dbase file into MS Access. (File / Get External Data / Import).

Design a new query and add the table you just imported.

For each attribute that you are inspecting follow the remaining procedures.



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Double-click the attribute you are inspecting.

Click the "Totals" button on the menu.

Run the query. It should produce a list of the unique values in the attribute column.

Compare this list to the enumerated value definitions in the metadata.

ArcMap can also be used to inspect ranges of values without having to examine each record:

In ArcMap, right-click the layer in the table of contents and select "Properties".

Click the "Symbology" tab.

Click "Categories" and select "Unique values".

Select the attribute name in the "Value Field" drop-down box.

Click "Add All Values".